

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. - 6. (canceled).

7. (previously presented): A serial printer including a carriage and a recording head held thereby, said carriage being reciprocated in a sub-scanning direction which is a width direction of a recording material, and said recording head recording a predetermined number of rows on said recording material in accordance with image data during the forward movement of said carriage, said serial printer comprising:

density measuring means attached to said carriage and for obtaining a measured density of a recorded portion when said carriage is moved backward;

density predicting means for obtaining a predicted density to be recorded on said portion, based on said image data;

operation means for comparing said measured density with said predicted density every portion, said operation means obtaining density difference when said measured density is less than said predicted density;

record correcting means for performing correction recording relative to the defective portion having said density difference, said record correcting means reciprocating said carriage again for the defective portion and driving said recording head in accordance with said density difference during the forward movement of said carriage; and

recording-material advancement means for advancing a sheet of said recording material in a main-scanning direction perpendicular to said sub-scanning direction, in order to record the next predetermined number of the rows on said recording material,

wherein, on the same sheet of the recording material, detection of the density difference and correction recording relative to the defective portion having said density difference are performed.

8. (previously presented): A serial printer including a carriage and a recording head held thereby, said carriage being reciprocated in a sub-scanning direction which is a width direction of a recording material, and said recording head recording a predetermined number of rows on said recording material in accordance with image data during the reciprocation of said carriage, said serial printer comprising:

first density measuring means disposed on one side of said recording head in said sub-scanning direction, said first density measuring means obtaining a measured density of a recorded portion just after recording when said carriage is moved forward;

second density measuring means disposed on the other side of said recording head in said sub-scanning direction, said second density measuring means obtaining a measured density of a recorded portion just after recording when said carriage is moved backward;

density predicting means for obtaining a predicted density to be recorded on said portion, based on said image data;

operation means for comparing said measured density with said predicted density every portion, said operation means obtaining density difference of the defective portion having said measured density which is less than said predicted density;

record correcting means for performing correction recording relative to said defective portion, said record correcting means reciprocating said carriage again for the defective portion and driving said recording head in accordance with said density difference during the movement of said carriage; and

recording-material advancement means for advancing a sheet of said recording material in a main-scanning direction perpendicular to said sub-scanning direction, in order to record the next predetermined number of the rows on said recording material,

wherein, on the same sheet of the recording material, detection of the density difference and correction recording relative to the defective portion having said density difference are performed.

9. (previously presented): A serial printer according to claim 7, wherein said density measuring means includes a light emitting element for illuminating said recorded portion, and a light receiving element for converting the reflected light into an electric signal.

10. (original): A serial printer according to claims 7 or 8, wherein said portion is a single pixel.

11. - 13. (canceled).

14. (currently amended): ~~A serial printing method according to claim 13, A serial~~
printing method for recording an image on a recording material one line by one line, said line

including a plurality of rows of which recording is performed by moving a recording head in a sub-scanning direction which is a width direction of said recording material, and said recording head having a plurality of recording elements arranged in a main-scanning direction perpendicular to said sub-scanning direction, said serial printing method comprising the steps of:

recording said rows with said recording head on a sheet of the recording material;

detecting the broken recording element among said recording elements, said broken recording element being impossible to record due to its failure based on whether a difference between a value output by the broken recording element and a reference value exceeds a predetermined threshold; and

recording said row to be recorded with said broken recording element, by moving said recording head again and by using another normal recording element among said recording elements when the difference exceeds the predetermined threshold, wherein recording said row again occurs on the same sheet of the recording material as the previous recording,

wherein said broken recording element is detected by measuring a density of a test pattern recorded by said recording head,

wherein said test pattern is arranged at a lateral side of said row in said sub-scanning direction.

15. (currently amended): ~~A serial printing method according to claim 13,~~ A serial printing method for recording an image on a recording material one line by one line, said line including a plurality of rows of which recording is performed by moving a recording head in a sub-scanning direction which is a width direction of said recording material, and said recording

head having a plurality of recording elements arranged in a main-scanning direction perpendicular to said sub-scanning direction, said serial printing method comprising the steps of:

recording said rows with said recording head on a sheet of the recording material;

detecting the broken recording element among said recording elements, said broken recording element being impossible to record due to its failure based on whether a difference between a value output by the broken recording element and a reference value exceeds a predetermined threshold; and

recording said row to be recorded with said broken recording element, by moving said recording head again and by using another normal recording element among said recording elements when the difference exceeds the predetermined threshold, wherein recording said row again occurs on the same sheet of the recording material as the previous recording,

wherein said broken recording element is detected by measuring a density of a test pattern recorded by said recording head, wherein said test pattern is arranged at a downstream side of said row in said main-scanning direction.

16. - 21. (canceled).

22. (currently amended): A serial printing method for recording an image on a recording material one line by one line, said line including one or more rows and said line being recorded by moving a recording head of a printer in a width direction of said recording material, said serial printing method comprising the steps of:

discharging a sheet of said recording material on which said image has been recorded, from said printer;

setting said discharged sheet of recording material to said printer again;

detecting whether or not a print defect occurs on said recorded row based on whether a difference between recorded data and reference data exceeds a predetermined threshold; and

performing correction recording relative to said row on which said print defect occurs, on said sheet of the recording material based on whether the difference exceeds the threshold.

23. (original): A serial printing method according to claim 22, wherein said print defect of said row is detected by measuring a density of said row.

24. 28. (canceled).

29. (previously presented): A serial printer according to claim 7, wherein said operation means obtains the density difference on said recording material, and wherein the record correcting means corrects said density difference on said recording material.

30. (previously presented): A serial printer according to claim 8, wherein the density difference for the defective portion is measured on said recording material, and wherein correction recording for the defective portion is performed on said recording material.

31. - 33. (canceled).

34. (previously presented): A serial printing method for recording an image on a recording material according to claim 22, wherein the image on said discharged recording material contains a print defect, and wherein said correction recording corrects the image on said discharged recording material.

35. - 36. (canceled).

37. (previously presented): A serial printer according to claim 7, wherein obtaining a measured density of a recorded portion, obtaining a predicted density to be recorded on said portion, comparing said measured density with said predicted density every portion, and performing correction recording to the defective portion occur during a same recording operation.

38. (canceled).

39. (previously presented): The printer of claim 7, wherein the correcting means performs correction recording relative to the defective portion when the density difference exceeds a predetermined threshold.